



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--------------------------------|-------------|----------------------|---------------------|------------------|
| 10/591,581 | 01/25/2007 | Takashi Udagawa | Q80423 | 3372 |
| 23373 | 7590 | 06/10/2010 | EXAMINER | |
| SUGHRUE MION, PLLC | | | SAYADIAN, HRAYR | |
| 2100 PENNSYLVANIA AVENUE, N.W. | | | | |
| SUITE 800 | | | ART UNIT | PAPER NUMBER |
| WASHINGTON, DC 20037 | | | 2814 | |
| | | | NOTIFICATION DATE | DELIVERY MODE |
| | | | 06/10/2010 | ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

sughrue@sughrue.com
PPROCESSING@SUGHRUE.COM
USPTO@SUGHRUE.COM

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/591,581 | UDAGAWA, TAKASHI | |
| | Examiner | Art Unit | |
| | HRAYR A. SAYADIAN | 2814 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 03 March 2010.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-15 is/are pending in the application.
 4a) Of the above claim(s) 12, 14 and 15 is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-11 and 13 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 05 September 2006 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>10/25/07; 1/25/07; 9/5/06</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____ . |

DETAILED OFFICE ACTION

Applicant's Election

1. The 3/3/2010 Reply elects, without traverse, Species B for prosecution on the merits.

The Reply identifies claims 1-11 and 13 as being directed to the elected invention. Accordingly, Examiner has withdrawn claims 12, 14, and 15 from further consideration as being drawn to non-elected inventions. See 37 CFR § 1.142(b).

The Election Requirement is proper, is maintained, and is now made final.

Information Disclosure Statement

2. This communication includes Examiner signed copies of the PTO-1449s submitted with the 10/25/07; 1/25/07; 9/5/06 IDSs.

35 U.S.C. § 102 Rejections of the Claims

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 providing the legal bases for the anticipation rejections in this Office Action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-11 and 13 are rejected under 35 U.S.C. § 102(e) as being anticipated by International Patent Document WO 2003/065465 to "Udagawa." U.S. Pat. No. 7,465,499 to "Udagawa" is provided as a US equivalent publication.

Udagawa discloses all of the limitations of the claims.

For example, with respect to claim 1, Udagawa discloses a boron phosphide-based semiconductor light-emitting device (see, for example, FIG. 5) comprising: a substrate (101) of silicon single crystal; a first cubic boron phosphide-based semiconductor layer (103) that is provided on a surface of the substrate and contains twins; a light-emitting layer that is composed of a hexagonal Group III nitride semiconductor (104) and provided on the first cubic boron phosphide-based semiconductor layer; and a second cubic boron phosphide-based semiconductor layer (105) that is provided on the light-emitting layer, contains twins and has a conduction type different from that of the first cubic boron phosphide-based semiconductor layer.

With respect to claim 2, for example, the recitation does not require the surface of the substrate to be 111, and any substrate of single crystal cubic lattice structure would have a 111 plane.

With respect to claim 3, see the abstract.

With respect to claims 4 and 9, the twinning surfaces in the poly-crystals have 111 twins having 111 crystal plane in a junction with the single crystal substrate (as recited in claim 4) and with the light emitting layer (as in claim 9).

With respect to claims 5 and 10, Udagawa discloses the very same procedure to produce the layers 103 and 105 and notes they would be p and n type, undoped. See also FIG. 7.

With respect to claims 6 and 8, the light emitting layer has a [-2110] direction (it is a crystal and there will be a plane with any direction) and it will be aligned with the [110] direction of at least one of the many micro-crystals forming the first and second BP

layers. The recitation "and has a (0001) crystal plane serving as a front surface" is met because the light emitting layer is a crystal and it will have such a surface, which will be a front surface, absent defining the scope of front surface.

With respect to claim 7, the diffusion of phosphorus atoms into the light emitting layer 104 will result in the recited profile.

With respect to claim 11, the material forming the layers 105/103 is disclosed to have energy bandgap of 3 eV.

With respect to claim 13, light goes through the second/top layer 105.

Double Patenting Rejections of the Claims

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer complying with 37 CFR § 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR § 3.73(b).

6. Claims 1-11 and 13 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims of Udagawa.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claims of Udagawa anticipate claims of this application. For example, claim 5 of Udagawa recites the features recited in at least claim 1 of this application.

CONCLUSION

7. A shortened statutory period for reply to this Office Action is set to expire **THREE MONTHS** from the mailing date of this Office Action. Applicant is reminded of the extension of time policy as set forth in 37 CFR § 1.136(a).

Any inquiry concerning this communication or earlier communications from an Examiner should be directed to Examiner Hrayr A. Sayadian, at (571) 272-7779, on Monday through Friday, 7:30 am – 4:00 pm ET.

If attempts to reach Mr. Sayadian by telephone are unsuccessful, his supervisor, Supervisory Primary Examiner Wael Fahmy, can be reached at (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available only through Private PAIR.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. The Electronic Business Center (EBC) at (866) 217-9197 (toll-free) may answer questions on how to access the Private PAIR system.

Application/Control Number: 10/591,581
Art Unit: 2814

Page 6

/Hrayr A. Sayadian/
Patent Examiner, Art Unit 2814